THE INVENTION CLAIMED IS:

1. A method comprising;

placing a calibration fixture in a substrate placement location, the calibration fixture including at least one sensor;

causing an end effector of a substrate handling robot to interact with the at least one sensor; and

based on the interaction between the end effector and the at least one sensor, determining calibration data for the substrate handling robot.

2. The method of claim 1, wherein the calibration data is indicative of at least one hand-off location at which the robot is to hand-off a substrate to the substrate placement location.

3. The method of claim 1, wherein the causing step includes causing the end effector to break a light beam emitted by the at least one sensor.

4. The method of claim 1, wherein the substrate placement location is part of a plating device.

5. The method of claim 4, wherein the substrate placement location is part of a plating module included in the plating device.

6. The method of claim 4, wherein the substrate placement location is part of a cleaning module included in the plating device.

7. The method of claim 4, wherein the substrate placement location is part of a spin-rinse-drying module included in the plating device.

8. The method of claim 1, wherein the calibration data includes at least one of height data, extension data and rotation data.

9. The method of claim 1, wherein the calibration data includes height data, extension data, and rotation data.

10. The method of claim 9, wherein the calibration data also includes pitch data indicative of an angular offset between two arms of the substrate handling robot.

11. The method of claim 9, wherein the height data includes data indicative of a first elevation and indicative of a second elevation.

12. The method of claim 9, where in the calibration data includes data indicative of a roll orientation of the end effector.

13. The method of claim 1, wherein the fixture includes a body having a shape that substantially corresponds to a shape of the substrate placement location.

14. The method of claim 13, wherein the body is cylindrically shaped.

15. The method of claim 1, wherein the fixture includes a body having a profile that substantially corresponds to a profile of a substrate to be processed in the substrate placement location.

16. The method of claim 1, wherein the placing step includes inserting the calibration fixture in a pocket

of the substrate placement location, the pocket being shaped and sized to receive a substrate to be processed at the substrate placement location.

17. A method comprising;

providing a calibration fixture having a body with an opening that extends from an edge of the body to at least a center of the body, the calibration fixture including a plurality of sensors mounted in the body so as to define respective light beam paths across the opening;

placing the calibration fixture in a substrate-placement location of a substrate processing station;

establishing a signal path between the sensors and a controller that is operatively coupled to a substrate-handling robot;

controlling the substrate handling robot to move an end effector of the substrate-handling robot so as to selectively obstruct at least one of the light beam paths;

receiving signals from at least one of the sensors, the received signals indicating the obstructing of the at least one of the light beam paths by the end effector;

on the basis of the received signals, determining hand-off location data for the substrate processing station, the hand-off location data including:

(i) data which defines an elevation parameter for the substrate handling robot;

(ii) data which defines an extension parameter for the substrate handling robot; and

(iii) data which defines a rotation parameter for the substrate handling robot; and

storing the hand-off location data.

18. The method of claim 17, wherein the hand-off location data further includes data which defines a first elevation parameter for the substrate handling robot and data which defines a second elevation parameter for the substrate handling robot.

19. The method of claim 17, wherein the plurality of sensors includes at least four sensors.

20. The method of claim 19, wherein three of the sensors are mounted in the body so as to define respective light beam paths that are substantially parallel to each other, and a fourth one of the sensors is mounted in the body so as to define a light beam path that is angled relative to the light beam paths of the other three sensors.

21. The method of claim 20, wherein:

a first one of the three sensors is mounted in the body at a first height;

a second one of the three sensors is mounted in the body at a second height that is lower than the first height;

a third one of the three sensors is mounted in the body at a third height that is lower than the second height; and

the fourth sensor is mounted in the body at substantially the second height.

22. The method of claim 17, wherein the providing step includes:

placing a sensor calibration tool within the body of the calibration fixture; and

mounting the sensors in the body of the calibration fixture at respective positions that are determined by using the sensor calibration tool.

23. An apparatus for use during calibration of a substrate handling robot comprising:

a body shaped to fit a substrate placement location; and

at least one sensor mounted in the body, the at least one sensor adapted to generate calibration data for a substrate handling robot during calibration of the substrate handling robot.

24. The apparatus of claim 23, wherein the body has an opening formed therein adapted to receive an end effector of the substrate handling robot.

25. The apparatus of claim 24, wherein the at least one sensor includes a plurality of sensors that define respective light beam paths across the opening.

26. The apparatus of claim 25, wherein the plurality of sensors are adapted to determine calibration data that includes:

(i) data which defines an elevation parameter for the substrate handling robot;

(ii) data which defines an extension parameter for the substrate handling robot; and

(iii) data which defines a rotation parameter for the substrate handling robot.

27. A system comprising;

a calibration fixture which includes a body shaped to fit a substrate placement location and at least one sensor mounted in the body;

a substrate handling robot; and

a controller coupled to the at least one sensor and to the substrate handling robot and operative to:

cause an end effector of the substrate handling robot to interact with the at least one sensor; and

determine hand-off location data for the substrate handling robot based on signals output from the at least one sensor.